GPS

Vehicle and personal location tracker

User Manual

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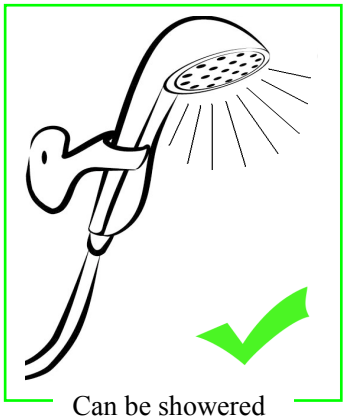
1. Product overview

Welcome to purchasing our product!

Tracker has the advantages of waterproof IP67, low power consumption, small size, easy to use and 10-12 days standby without charging. It is a GPS/GPRS personal location tracker. It specially applies for Alzheimer's patient tracking, prisoner/parolee management, pet tracking, etc.



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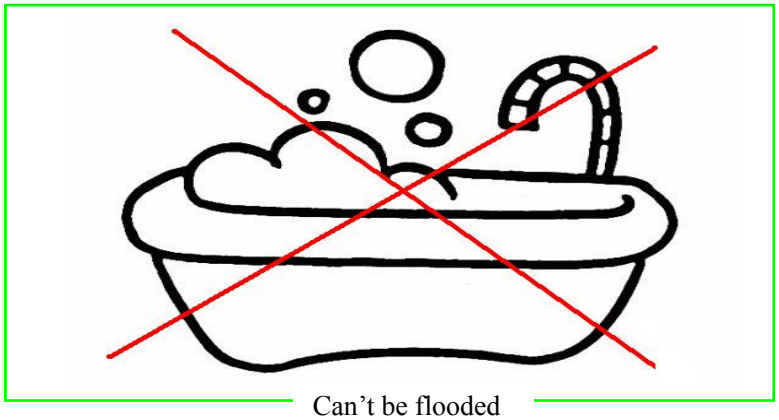


Can't be flooded

Tracker has built-in terminals of GPS (**global positioning system**) module and GSM communication module, which used for getting location data and send it to authorized phone number via SMS, and tracking through free maps Google Earth or Google Map; If your mobile phone is smart phone and opened with GPRS service, it is more convenient to see location of the tracker on smart phone by setting the SMS location format to be Google Link. At the same time, the GPRS data can be sent to the internet server, which can achieve the checking, monitoring and managing of the tracker on computer.

The tracker supports three working modes: **personal mode, smart mode, vehicle mode**.

The tracker supports the following features:

◆Waterproof: IP67
◆Easy authorized phone number setup by calling
◆Real time tracking
◆Remotely monitoring
◆SOS emergency calling
◆Tracking regularly by GPRS
◆GPRS data logger
◆Query APN automatically
◆3 kinds of tracking mode
◆Geo-fence
◆Time-zone setting
◆Low battery alarm
◆Auto power on/off
◆Belt-on/off alarm

2. Safety instruction

Read these simple guidelines. Not following them may damage the tracker, put you in danger or break the law.

Switch on safely	Do not switch the tracker on when wireless phone use is prohibited or when it may cause interference or danger.
Switch off in hospitals	Follow any restrictions. Switch the tracker off near medical equipment.
Switch off in aircraft	Follow any restrictions. Switch the tracker off on the plane.
Switch off when refueling	Do not use the tracker when at a refueling point.
Switch off near blasting	Follow any restrictions. Do not use the tracker when blasting is in progress.
Qualified service	Only qualified personnel can repair the tracker.
Water resistance	IP67.

3. Specification and parameters

Items	Specification
Charging Voltage	DC 4.5-5.5V/750mA (Mini USB)
Internal Battery	Rechargeable 750 mAh battery(3.7V)
Dimension	55*43*13mm
Weight	147.5g
Operating Temperature	-20 ～ +55 °C
GSM Module	Quad Band GSM 850/900/1800/1900 MHz
GPS Chipset	Newest Ublox chipset
GPS Sensitivity	-160Db
GPS Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	50 Channels
Position Accuracy	<10 M, 2D RMS
Velocity Accuracy	0.1 M/S
Time Accuracy	Satellite Time: 1 millisecond time synchronization
Update Time	Average 0.1 second
Hot Start up	Average 1 second

Warm Start up	Average 3 second
Cold Start up	Average 27 second
Max. Altitude	18,000m (Max. 60,000 ft)
Max. Speed	500 m/s (Max. 1000 knots)
Max. Acceleration	less than 4g
Working time	10-12 days of standby time in personal mode; 12 hours of standby time in vehicle mode
LED	LED for showing states of power, GPS, GSM and battery level
Button	2 buttons. 1 SOS button, 1 power switch

4. Getting started

This section will describe how to use the tracker.

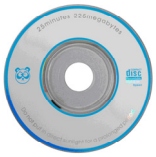
4.1 Hardware and accessories

Device

AC adapter

Charger

Tool for unlock



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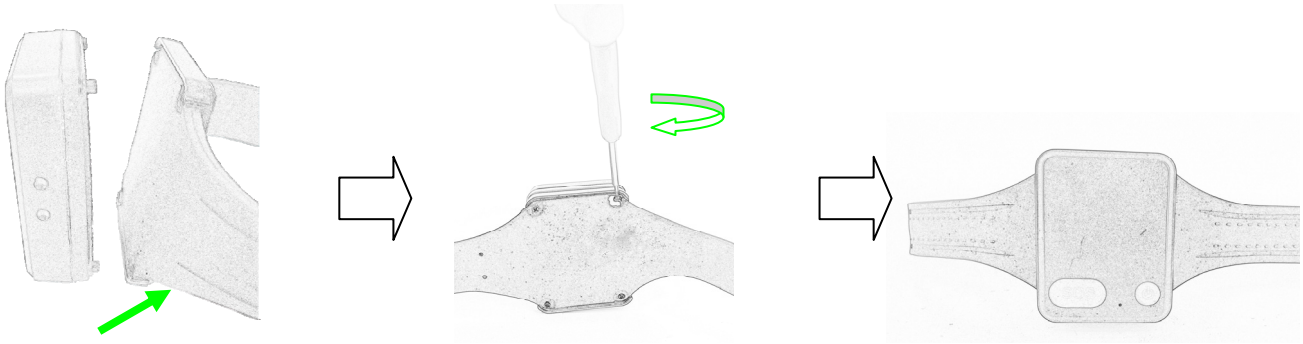
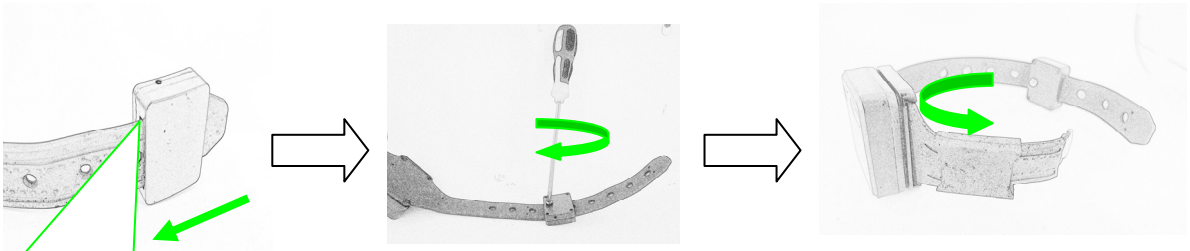
4.2 How to use the belt

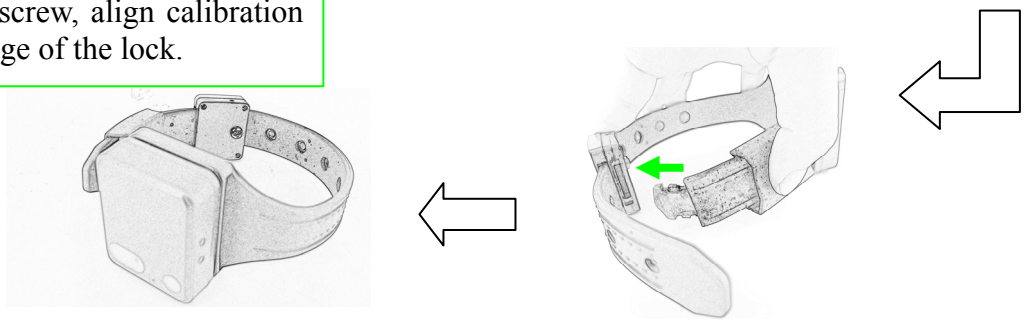
——fixed device on the belt with screw.



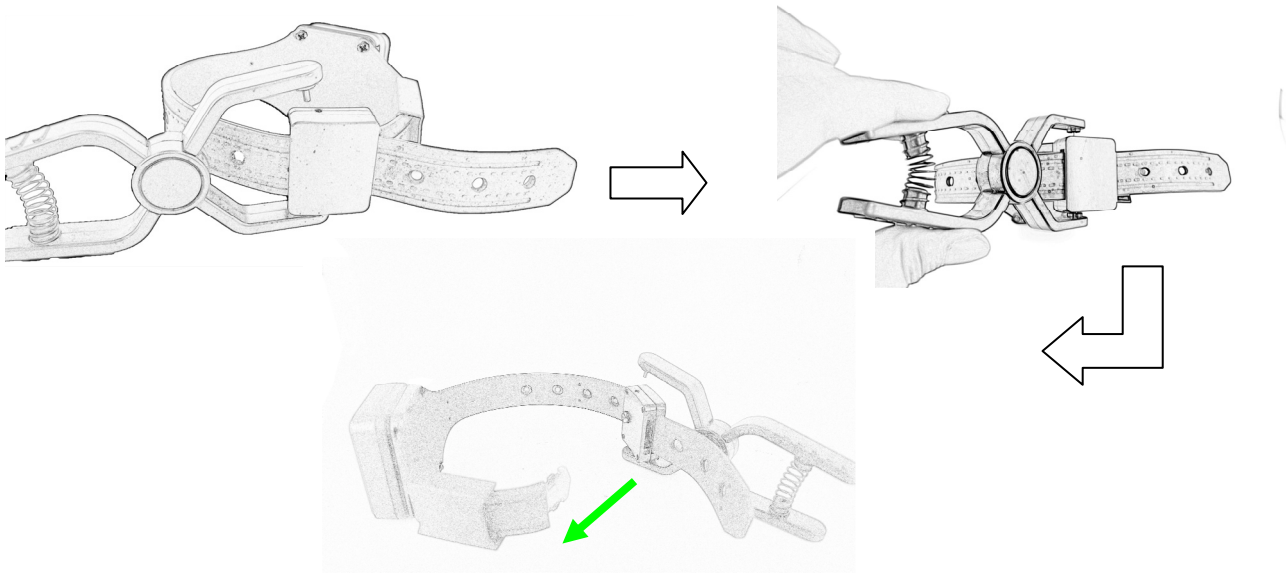
——adjust to suitable size and fixed the belt.

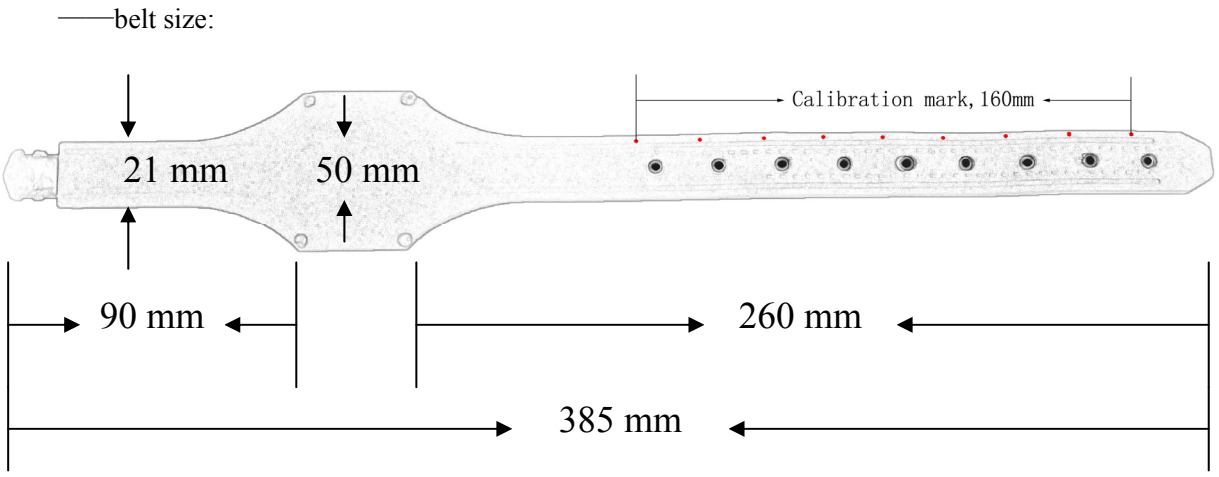


Note: to fix screw, align calibration mark with edge of the lock.



——unlock the belt.





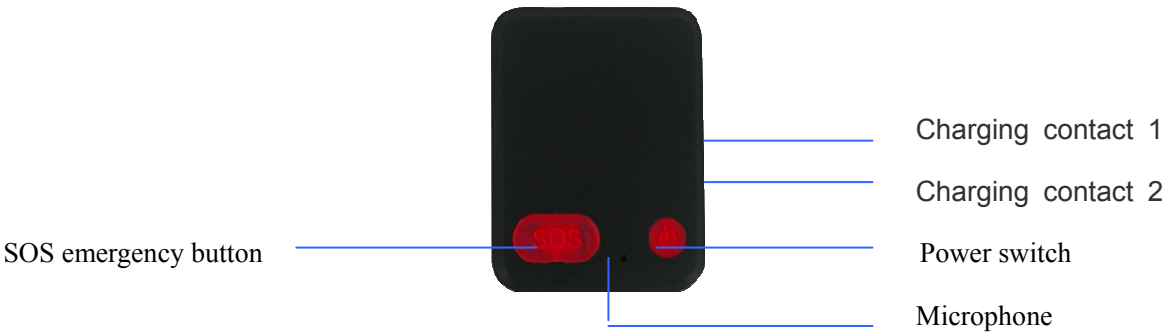
【Warranty Statement of Device Belt 】

Under normal usage, the warranty time is 12 months from the date of purchasing.

Please note the device belt belongs to consumable item. Any extreme usage, externality damage and other causes may result in material aging and cracking, thereby decrease working lifetime. In view of this, the warranty does not cover the following:

1) Any damages by externality.
2) Any breakdown by extreme usage.
3) Any broken by inappropriate physical environment.

4.3 Function key and port



Red/green – Power indication	
The red light is always on	Power charging
The green light is always on	Power charging finished
Blue – GSM indication	
0.3s on and 0.3s off	GSM module is initializing or calling in
Always on	GSM network is not registered
1s on and 3s off	GSM network is registered
0.1s on and 3s off	GSM network is registered and connected to the server by GPRS
Always off	GSM in power save mode
Yellow – GPS indication	
0.3s on and 0.3s off	GPS module is initializing or waiting for the SOS button press to confirm the calling in number as the authorized number
Always on	Button being pressed
1s on and 3s off	GPS module is working normally but hasn't fixed position
0.1s on and 3s off	GPS module is working normally and has fixed position
Always off	GPS module stops working
Switch	
Power switch	Press 1s to check battery level; Long press 5s for turn on /off tracker
Button	
SOS Button	Press SOS button for 3 seconds so tracker will send an emergency SMS to the authorized number and dial it
Others	
Belt	Belt-on/off alarm

4.4 First use

Please read this manual before using tracker.

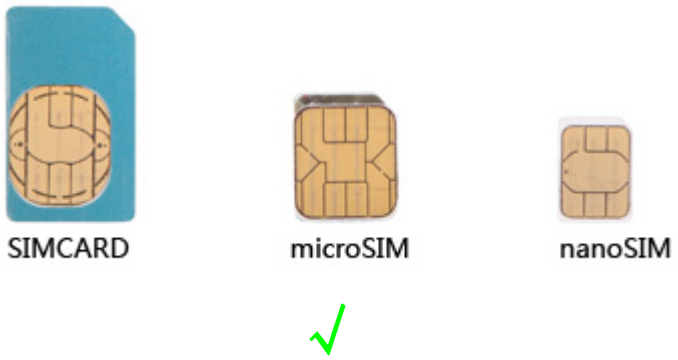
4.4.1 Remove the back cover

- Use the mini screwdriver to remove the four screws to release the back cover

Note: please be careful the battery wires.

4.4.2 Insert the SIM card

- Tracker only supports Micro SIM card (Do not cut it to nano SIM card)



- Check the SIM card has not run out of credit money
  (Test the SIM card in a phone to make sure it can be makes a phone call or sends SMS)

- Check the lock code of the SIM card is turned off

- If you require the function of real time tracking or easy authorized phone number setup by calling, please make sure the SIM card installed supports displaying caller ID.

4.4.3 Fixed the back cover

- Please do not let the gasket come out when you turn of the screw.

4.4.4 Charging

- Use AC adapter, the charge time is about 2.5-3 hours.

4.4.5 ON/OFF

- Press the power switch for 5 seconds and tracker will turn on/off.

Note: after connected with the belt, tracker only can be turned on and can not be turned off!

4.4.6 Parameters setup

- Tracker only supports APP setup software by smart phone or by sending command via SMS. After setup, please turn the tracker on and positioning in an open environment, please do it every time after turn the tracker on.

5. Change password

SMS Command: `$SMS,******;W001,######;!`
Description: change user's password
Explain:
******: user password, the range of 6 digits, default password is 000000

Note: please switch to the English input method when you input a command by smart phone; tracker will only accept commands from a user with the correct password. Command will be ignored if with wrong password.

######: new password, the range of 6 digits.

Example:

$SMS,000000;W001,123456;!

6. Authorized number

6.1 Set the authorized number by SMS

SMS Command: $SMS,000000;W010,NO.,Phone Number,ABC;!

Description: Set authorized phone number and its related functions

Explain:

NO.: authorized number's serial number, range of: 1~3

Phone Number: authorized number, range of: 0~19 characters

A: range of: 0~1; when the parameter 'A' is 0, it means disable Geo-fence alarm, otherwise it means enable Geo-fence alarm. Default is 0

B: range of: 0~1; when the parameter 'B' is 0, it means disable monitoring function, otherwise it means enable monitoring function. Default is 0

C: range of: 0~1; when the parameter 'C' is 0, it means disable SOS emergency calling function, otherwise it means enable SOS emergency calling function. Default is 0

For example:

Set the 1st authorized number is 13800000000 and enable monitoring function.

$SMS,000000;W010,1,13800000000,010;!

6.2 Easy authorized phone no. setup by calling

Tracker only supports three authorized numbers; we can set the authorized number by phone call if there are not set authorized number fully (this function only supports to set the authorized number, not included its related functions).

Set as follows:

Any non-authorized number calls to the tracker over than 10 seconds, the tracker will hang up the line automatically and the yellow light will blink for 30 seconds. During these 30 seconds, press SOS button less than 3 seconds, and then successfully set this call-in number as a new authorized number and send an SMS to this number to inform the setting is OK.

6.3 Monitoring function

If enable monitoring function, when the authorized number call to the tracker, it will answer the call automatically and shut down the speaker and the background voice of the tracker will be listened.

Note: Please make sure the SIM card installed supports displaying caller ID when you want to enable this function.

6.4 Real time tracking

The tracker will reply a location SMS if there is any authorized number makes a phone call to it.

7. SOS emergency calling

Press SOS button for 3 seconds or longer, tracker will send SOS alarm SMS to all authorized numbers. If the authorized number is set with the SOS emergency calling function, tracker will call those authorized numbers one by one in order. If one of those is answered, the tracker will not call the others.

8. Tracking regularly by GPRS

SMS Command:

$SMS,000000;W002,APN,Username,Password;W003,IP,Port;W004,ID;W005,X;W009,Y;!

Description: Enable this function

Explain:

APN: Access point name of network, range of: 0~29 characters

Username: accesses port' user name, range of: 0~29 characters

Password: accesses port's password, range of: 0~29 characters

IP: server' IP address, range of: 0~29 characters

Port: server's port, range of: 0~65535

ID: device ID, range of: 0~15 characters

X: GPRS upload interval, range of: 0~65535, default is 0, unit is 30 seconds

Example: if X is 2, and 2*30s=60s, so it means the GPRS upload interval is 60 seconds.

Y: GPRS upload mode, range of: 0~2, default is 0

（0 means disable GPRS function, 1 means upload by TCP, 2 means upload by UDP）

Example:

$SMS,000000;W002, cmnet,,;W003,192.168.1.1,8088;W005,1;W009,1;!

9. GPRS data logger

Tracker has build in 8M bytes memory for GPRS data save. When GPRS interval tracking can not upload to server, data will be automatically stored in the memory. After that, once the GPRS reconnected, tracker will send the data to server again.
Note: real time data will be sent first, the priority of the stored data is low.

10. Acquire APN automatically

The APN list can be configured before delivery (default is China APN). When insert SIM card, tracker will automatically acquire APN in the APN list. If user already set APN, then the tracker will not acquire APN automatically.

11. Three kinds of tracking mode

SMS Command: $SMS,000000;W016,X;!
Description: there are three kinds of mode: personal mode, smart mode, vehicle mode.
Explain:
X: tracker's work mode. Range of: 0~2 (0 means personal mode, 1 means smart mode, 2 means vehicle mode). Default: 1.

- **Personal mode**: When there are new data or alarms, GPS turns on the positioning function automatically. No matter the positioning succeeds or fails, GPS turns off the positioning function automatically, and upload new data or send out alert message.
- **Smart mode**: GPS always turn on when device is move; otherwise only when there are new data or alarms, GPS turns on the positioning function automatically. No matter the positioning succeeds or fails, GPS turns off the positioning function automatically, and upload new data or send out alert message.
- **Vehicle mode**: GPS always turn on whether tracker move or not.

Example:
$SMS,000000;W016,1;!

12. Geo-fence

SMS Command: $SMS,000000;W018,NO.,name,lat,lng,radius;!
Description: when set the geo-fence, longitude and latitude can be filled in command directly; tracker will get the newest position automatically to be fence center if longitude and latitude is empty in command. After enable geo-fence function, when tracker moves in/out the preset geo-fence, it will send an SMS alarm to the authorized phone number (please also enable the Geo-fence function when you set the authorized number) and send this alarm to server via GPRS.

Explain:

NO.: serial number of geo-fence, range of: 1 to 5

name: name of geo-fence, range of: 0-9 characters

lat: center's latitude, range of: -90.00000000~90.00000000, unit: degrees

lng: center's longitude, range of:-180.00000000~180.00000000, unit: degrees

radius: geo-fence's radius, range of: 0.0~1.79E+308, unit: meters

Note: The geo-fence is a perfect circle based on the preset radius and centre.

Example:

$SMS,000000;W018,1,school,22.12345,114.12345,10.50;!

$SMS,000000;W018,1,home,,,10.50;!

13. Time zone setting

SMS Command：$SMS,000000;W020,X;!

Description: Set the SMS time zone

Explain:

X: time zone's value, range of:-720~780, default: 0, unit: minutes

For example:

$SMS,000000;W020,480;!

1 hour is equal to 60 minutes, and Beijing is GMT+8, 60*8=480(parameter), so this command means 480 is the time zone value in Beijing.

14. Low battery alarm

When the battery level is lower than 15%, it will send SMS to all authorized numbers or send alarm data to server. Tracker will be off automatically if the power level is 0%; during charging, tracker will automatically switch on when power level is higher than 15%, and send a warning SMS to all authorized number.

15. Power on/off automatically

Tracker will be off automatically if the power level is 0%; during charging, tracker will automatically be switch on when power level is higher than 15%, and send a 'Power ON' warming message to each authorized number.

16. LED indications for battery level

Long press power button in 5s for turn on/off tracker;

Short press power button in 1s to check battery level:

1) If there are blue and yellow led lights at the same time, it means the battery level between 15%-100%. Please check in SMS and PC tracking platform for more details;

2) If there just the yellow led lights, it means the battery level is lower than 15%, please charging in time.

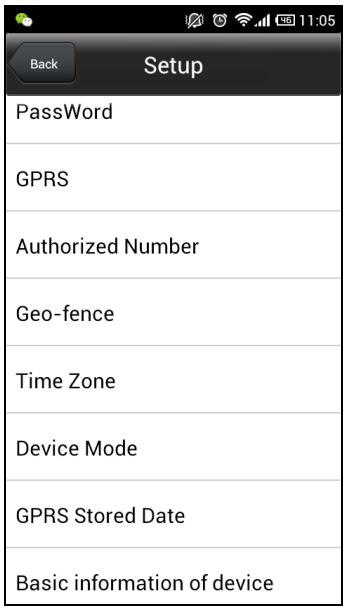
17. Belt on/off alarm

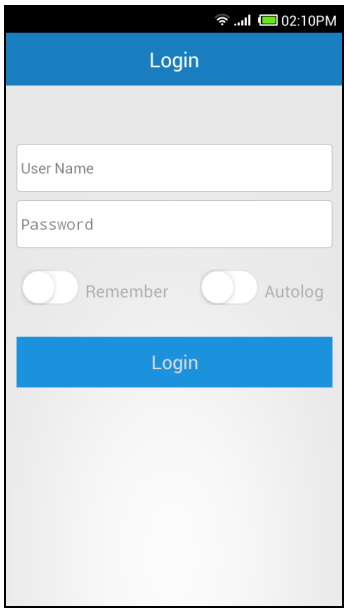
-- After connected with the belt, tracker will send belt on alarm to all of the authorized phone numbers and send alarm data to service;

-- After unconnected with the belt or belt has been cut, tracker will send belt off alarm to all of the authorized phone numbers and send alarm data to service.

Note: after connected with the belt, tracker only can be turned on and can not be turned off.

18. APP for smart phone

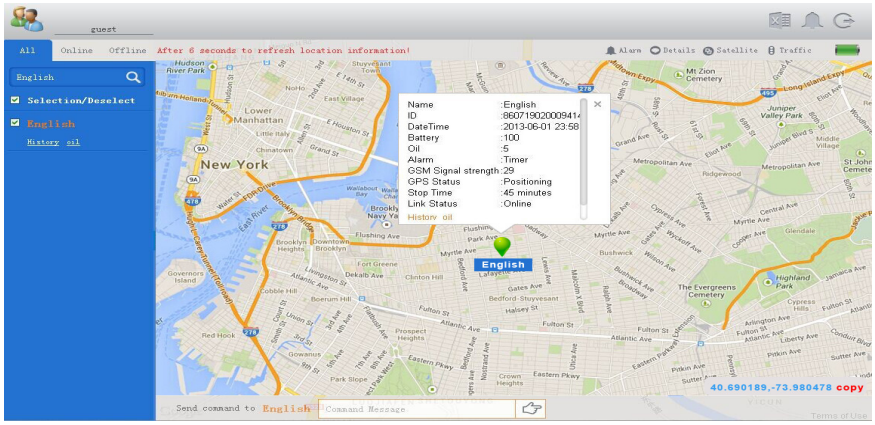




19. GPS tracking and monitoring platform

User Name: Guest **Password**: 666666

Website: http://hk.gpstotrack.com/gps



20. Problems & Diagnostics

Cannot switch on	
Possibility	**Solution**
Power switch operation's problem	Make sure press the power switch for 5 seconds or longer
Low battery	Charging for 2.5 – 3 hours
Not reply SMS	
Possibility	**Solution**
Blue light is always on	Make sure tracker can receive the strong GSM signal Check SIM card installation, insert again if necessary Replace a new SIM if necessary
GSM network is busy	Wait for SMS. Sometimes GSM networks are slow during peak time or when they have equipment problems.
Password or SMS format is wrong	Double check password or SMS format, password and format must be right
Not enough SIM balance	Replace SIM card or check balance value
Low battery	Please do charging
Yellow light is 1s on and 1s off	
Possibility	**Solution**
The tracker has already blocked the GPS signal	Move the tracker to open area w/o any tall building, tree and heavy raining. Those can shield GPS signal
GPS signal is weak	Place the GPS internal antenna face to the sky
Low battery	Please do charging
No GPRS connection	
Possibility	**Solution**
SIM card cannot supports GPRS function	Enable SIM's GPRS function
GPRS function is disabled	Enable the GPRS function
Incorrect IP or Port	Double check IP and Port and make sure they are correct, then restart the tracker
GSM signal is weak	Move the tracker to a place with strong GSM signal